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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,658	04/19/2006	Ulrich Brochheuser	66967-0054	8464
84362	7590	06/05/2009		
GKN Driveline/ITG c/o Kristin L. Murphy 39533 Woodward Avenue, suite 140 Bloomfield Hills, MI 48304			EXAMINER TOLAN, EDWARD THOMAS	
			ART UNIT 3725	PAPER NUMBER
			MAIL DATE 06/05/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/562,658

Applicant(s)

BROCHHEUSER ET AL.

Examiner

EDWARD TOLAN

Art Unit

3725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2009.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 10-29 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1 and 10-29 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 19 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 10-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Jahani et al. (7,412,866). Jahani discloses a method of manufacturing hollow shafts (22) having first (42) and second (38) end portions of greater wall thickness (T1,T5) and at least two intermediate portions (52,56,58,62) of reduced wall thickness from a tube blank having constant wall thickness (T0). Jahani discloses providing a mandrel (100) having diameters stepped over its length, including a first longitudinal section (114) having a smallest first diameter ($\Phi 2$) and adjacent to the first longitudinal section, a second longitudinal section (118) having a second diameter greater than the first diameter as it is a tapered transition portion, and adjacent to the second longitudinal section (118), a third longitudinal section (104) having a third diameter ($\Phi 1$) being greater than the diameter of the second longitudinal section (118). The mandrel is inserted into the tube blank and an external diameter of the tube blank is reduced by drawing through a matrix (124,200) to form end portions and intermediate portions of the tubing over the first, second and third longitudinal sections of the mandrel.

Regarding claims 10-16, Jahani discloses (column 7, lines 15-20 and 30-38) that either the mandrel or tube blank are advanced toward one another and that a die may be moved in relation to the mandrel and tube blank. One or more further intermediate portions ($\Phi 3$, $\Phi 4$) each having an increased wall thickness are provided.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jahani in view of Kaneko (6,758,077). Jahani does not disclose swaging or rolling. Kaneko teaches that it is known to form a hollow shaft of differing wall thickness by using a stepped mandrel (2) and rolling tool (3). It would have been obvious to one skilled in the art at the time of invention to form the shaft of Jahani with a roller as taught by Kaneko in order to spin form the tube.

Claims 23-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jahani in view of Stump (4,161,112). Jahani does not disclose a cone angle of the mandrel and a wall thickness ratio. Stump teaches a mandrel (11) having a cone angle (25) of 6 degrees (column 4, lines 32-35 and column 6, lines 20-22). Stump teaches a wall thickness ratio (column 6, lines 5-7) of greater than 1.6, $0.465/0.260 = 1.78$. It would have been obvious to one skilled in the art at the time of invention to provide the

mandrel of Jahani with a cone angle as taught by Stump in order to produce shafts of a varying wall thickness.

Response to Arguments

Applicant's arguments with respect to claims 1 and 10-29 have been considered but are moot in view of the new ground(s) of rejection. The 102b rejection using Alexoff has been withdrawn in response to Applicant's amendments filed (3-12-2009) and Applicant's request that the Amendments be entered with the Request for Continuing Examination of 4-2-2009.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication should be directed to Ed Tolan whose telephone number is 571-272-4525. FAX communications should be sent to 571-273-8300.

/Edward Tolan/

Primary Examiner, Art Unit 3725